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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	:	
GUDMUNDUR HJARTARSON et al.	:	Examiner: Andrew Chung Cheung Lee
Serial No.: 09/810,938	:	Group Art Unit: 2619
Filed: March 16, 2001	:	
For: SYSTEM AND METHOD FOR PROGRAMMABLE SPECTRUM MANAGEMENT	:	

APPEAL BRIEF

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I. REAL PARTY IN INTEREST

The real party in interest is Ciena Corporation, the assignee of record of the subject patent application.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any prior or pending appeals, judicial proceedings or interferences which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal. However, Appellants note that Appellants previously appealed the Final Rejection issued on May 5, 2005 and filed a brief in support thereof on December 21, 2005. Prosecution was reopened by the Official Action dated April 3, 2006.

III. STATUS OF CLAIMS

Claims 1 through 21 are currently pending and have been finally rejected. Appellants hereby appeal the rejections of Claims 1 through 21.

IV. STATUS OF AMENDMENTS

No amendment was filed in the subject patent application subsequent to issuance of the Final Rejection on June 23, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Appellants' invention, as recited in Claim 1, is directed to a line interface for coupling a twisted pair telephone line with a communications network. (See Specification, p. 3, lines 5 and 6 and Figure 3, reference numeral 60) The line interface comprises a broadband analog front end circuit (See Specification, p. 3, lines 30 to 33 and Figure 3, reference numeral 62) coupling the twisted pair telephone line (See Figure 3, reference numeral 12) with the line interface and a programmable filter (See Figure 3, reference numeral 66) coupled to receive an output signal from the broadband analog front end circuit and configured to filter frequency bands of the output signal into a plurality of separate, variable bandwidth transmission channels. (See Specification, p. 3, lines 5 to 10, p. 4, line 4 to p. 6, line 16 and Figures 4, 6D and 6E) The plurality of separate, variable bandwidth transmission channels are associated with the communications network and the frequency bands and the variable bandwidths are determined by programming the programmable filter. (See Specification, p. 3, lines 5 to 10 and p. 6, lines 5 to 25)

Appellants' invention, as recited in Claim 15, is directed to a method of providing a plurality of services (See Figure 4) over a twisted pair telephone line (See Figure 3, reference numeral 12), comprising the steps of: receiving a broadband analog signal from the twisted pair telephone line (See Specification, p. 4, lines 1 and 2; and, Figure 3); filtering the broadband analog signal using a programmable filter (See Figure 3, reference numeral 66) into a plurality of separate bands wherein the plurality of separate bands are determined by programming the filter to generate a plurality of variable bandwidth channels (See Figures 3, 4, 6D and 6E; and

Specification, p. 4, line 3 to p. 6, line 25); and transmitting the plurality of separate bands to a plurality of different service providers (See Specification p. 4, lines 26 to 29).

Appellants' invention, as recited in Claim 18, is directed to a line interface for coupling a twisted pair telephone line with a communications network. (See Specification, p. 3, lines 5 and 6 and Figure 3, reference numeral 60) The line interface includes a broadband analog front end circuit (See Specification, p. 3, lines 30 to 33 and Figure 3, reference numeral 62) coupling the twisted pair telephone line (See Figure 3, reference numeral 12) with the line interface and a programmable filter (See Figure 3, reference numeral 66) coupled to receive an output signal from the broadband analog front end circuit and configured to filter frequency bands of the output signal into a plurality of different transmission channels. (See Specification, p. 3, lines 5 to 10, p. 4, line 4 to p. 6, line 16 and Figures 4, 6D and 6E) The plurality of different transmission channels include a first transmission channel having a first variable frequency bandwidth and a second transmission channel having a second variable frequency bandwidth wherein the programmable filter can be programmed to adjust a band edge of either the first transmission channel or the second transmission channel to increase or decrease the first and second variable frequency bandwidths, respectively. (See Specification, p. 3, lines 5 to 10, p. 4, line 4 to p. 6, line 16 and Figures 4, 6D and 6E)

Appellants' invention, as recited in Claim 20, is directed to a method of providing a plurality of services (See Figure 4) over a twisted pair telephone line (See Figure 3, reference numeral 12). The method includes the steps of: receiving a broadband analog signal from the twisted pair telephone line (See Specification, p. 4, lines 1 and 2; and, Figure 3); filtering the broadband analog signal using a programmable filter (See Figure 3, reference numeral 66) into a plurality of separate frequency bands including a first transmission channel having a first

variable frequency bandwidth and a second transmission channel having a second variable frequency bandwidth; programming the programmable filter to adjust a band edge of either the first transmission channel or the second transmission channel to increase or decrease the first and second variable frequency bandwidths, respectively (See Figures 3, 4, 6D and 6E; and Specification, p. 4, line 3 to p. 6, line 25); and, transmitting the first and second transmission channels to different service providers. (See Specification p. 4, lines 26 to 29).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are to be reviewed in the subject appeal:

(1) Whether Claims 1 through 6, 8 through 16 and 18 through 21 are anticipated under 35 U.S.C. 102 (e) by U.S. Patent No. 6,522,730 ("Timm et al."); and,

(2) Whether Claims 7 and 17 are obvious under 35 U.S.C. 103 based on the combination of Timm et al and U.S. Patent No. 5,889,856 ("O'Toole et al.")

VII. ARGUMENT

Appellants respectfully submit that none of Claims 1 through 6, 8 through 16 and 18 through 21 are anticipated by Timm et al. as Timm et al. fail to disclose expressly or inherently each and every element set forth in these claims. Accordingly, the Examiner's rejection of Claims 1 through 6, 8 through 16 and 18 through 21 cannot be sustained.

Appellants further submit that Claims 7 and 17 are not rendered obvious under 35 U.S.C. 103 by the combination of Timm et al. and O'Toole et al. because the necessary teaching, suggestion or motivation to combine these references is lacking. Further, even if the unobvious combination of Timm et al. and O'Toole et al. is made, the combination fails to teach or suggest Appellants' invention. As such, the rejection of Claims 7 and 17 cannot be sustained.

A. THE REJECTION OF CLAIMS 1 THROUGH 6, 8 THROUGH 16 AND 18 THROUGH 21 UNDER 35 USC 102 (e) IS ERRONEOUS

"Anticipation...requires that the *identical invention that is claimed* was previously known to others and thus is not new...*When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found,* and validity is determined in terms of § 103." *Continental Can v. Monsanto,* 948 F.2d 1264, 1267 (Fed. Cir. 1991)(emphasis added).

"A patent is invalid for anticipation *when the same device or method, having all the elements and limitations contained in the claims,* is described in a single prior art reference." *ATD Corporation v. Lydall, Inc.*, 159 F.3d 534, 545 (Fed. Cir. 1998)(emphasis added). See also *Crown Operations International, Ltd. v. Krone*, 289 F.3d 1367, 1375 (Fed. Cir. 2002)

The single reference must have an enabling disclosure. See *Advanced Display Systems Inc. v. Kent State University*, 54 USPQ 2d 1673, 1679 (Fed. Cir. 2000)("Accordingly, invalidity by anticipation requires that the four corners of *a single, prior art document* describe every element of the claimed invention, expressly or inherently, such that *a person of ordinary skill in the art could practice the invention without undue experimentation.*")(emphasis added); See also, *PPG Industries, Inc. v. Guardian Industries Corp.*, 37 USPQ 2d 1618, 1624 (Fed. Cir. 1996)("To anticipate a claim, a reference must disclose every element of the challenged claim and *enable one skilled in the art to make the anticipating subject matter.*")(emphasis added)

"To serve as an anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence. *Such evidence must make clear that the missing descriptive matter is necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can,* 948 F.2d at 1268. (emphasis added)

"*Inherency, however, may not be established by probabilities or possibilities.* The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Oelrich,* 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)(emphasis added). See also, *Continental Can,* 948 F.2d at 1269.

"[T]he initial burden of establishing a *prima facie* basis to deny patenability to a claimed invention rests upon the examiner...In relying upon inherency, *the examiner must* provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art." *Ex parte Levy,* 17 USPQ 2d 1461, 1464 (BPAI 1990)(emphasis in original)

Evaluated under these controlling legal standards, the rejections of Claims 1 through 6, 8 through 16 and 18 through 21 under 35 USC § 102 based on Timm et al. cannot be sustained.

1. Claim 1 is not anticipated by Timm et al.

Appellants' invention, as recited in Claim 1, is directed to a line interface for coupling a twisted pair telephone line with a communications network. The line interface comprises a broadband analog front end circuit coupling the twisted pair telephone line with the line interface and *a programmable filter coupled to receive an output signal from the broadband analog front end circuit and configured to filter frequency bands of the output signal into a plurality of separate, variable bandwidth transmission channels. The plurality of separate variable bandwidth transmission channels are associated with the communications network and the frequency bands and the variable bandwidths are determined by programming the programmable filter.*

Appellants' invention, as recited in Claim 1, is not anticipated by Timm et al. for at least the reason that Timm et al. fails to disclose expressly or inherently a programmable filter as set forth in Claim 1. Regarding any assertion that Timm et al. inherently discloses Appellants' invention, Appellants note that *"[i]nherency, however, may not be established by probabilities or possibilities.* The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Oelrich,* 666 F.2d at 581. (emphasis added) See also, *Continental Can,* 948 F.2d at 1269. "In relying upon inherency, *the examiner must* provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art." *Ex parte Levy,* 17 USPQ 2d at 1464(emphasis in original)

A preferred embodiment of the Appellants' invention is depicted in Figure 3 reproduced below:

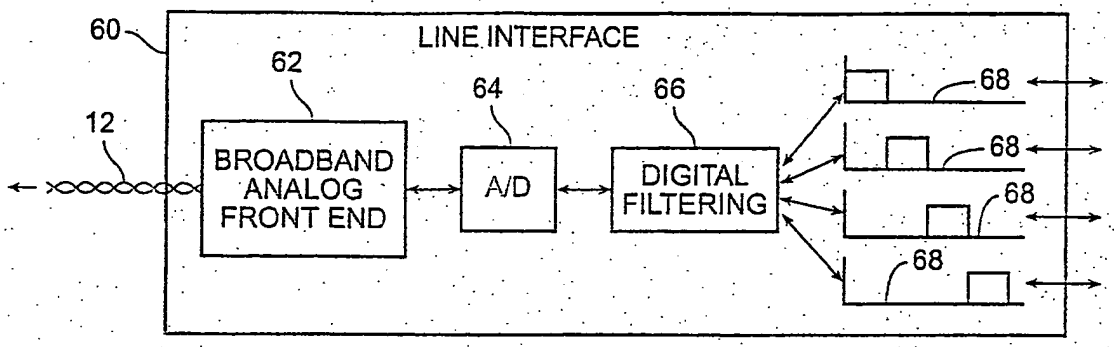

FIG. 3

As is readily evident from Figure 3, there are *a plurality of outputs* from the digital programmable filter 66 consistent with the language in Claim 1 that the programmable filter is configured to filter frequency bands of the output signal into *a plurality of separate, variable bandwidth transmission channels.*

Timm et al. does not anticipate or render obvious Appellants' invention, as recited in Claim 1. For example, Timm et al. does not teach or suggest a programmable filter coupled *to receive an output signal from the broadband analog front end circuit and configured to filter frequency bands of the output signal into a plurality of separate, variable bandwidth transmission channels.* The Examiner is interpreting splitter 30 depicted in Figure 3 of Timm et

al. reproduced below as the broadband analog front end circuit. (See Official Action dated June 23, 2008, p. 2):

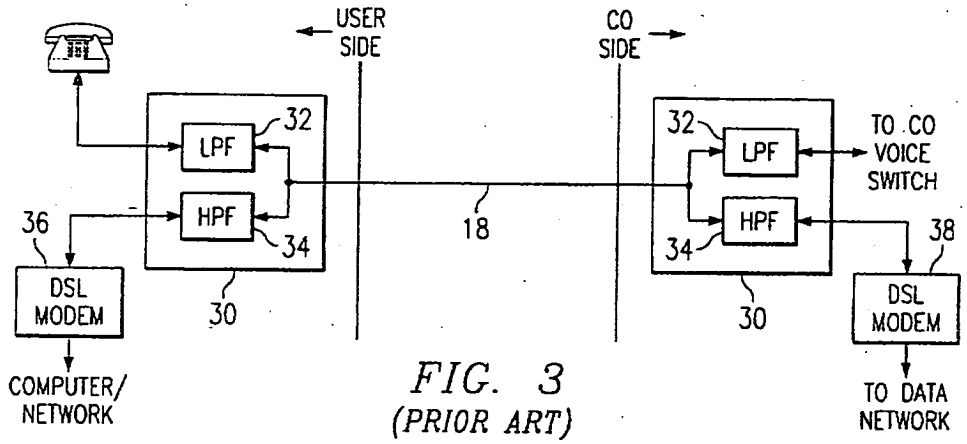

FIG. 3
(PRIOR ART)

Splitter 30 as shown in the above figure sends a single data stream to the DSL modem 36 that includes the programmable filter 40 as shown in Figure 4. *A single data stream* exits the programmable filter 40 as shown in Figure 4 of Timm et al. reproduced below:

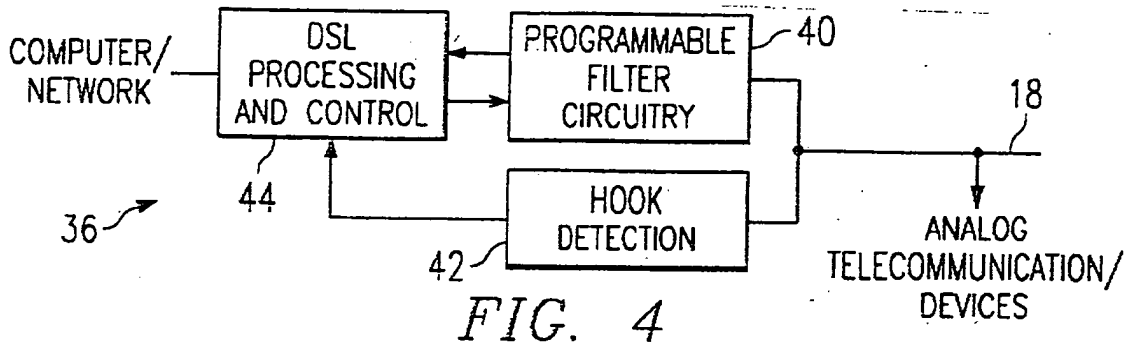

FIG. 4

Nowhere does Timm et al. teach or suggest using the programmable filter 40 to filter the input from splitter 30 into a plurality of *separate, variable bandwidth transmission channels*. Rather, as clearly depicted in Figure 4 of Timm et al., *a single data path* is input into programmable filter 40 from the splitter 30 and *a single data path* exits the programmable filter 40. For this reason alone, Timm et al. cannot possibly anticipate Appelliants' invention as set forth in Claim 1.

In an attempt to overcome the evident shortcomings of Timm et al., the Examiner cites to Timm et al. at col. 5, lines 1 to 9. To the extent the Examiner is attempting to use the transmitted and received signals as the plurality of separate, variable bandwidth transmission channels, the

clear and unambiguous language of Claim 1 precludes such. Specifically, Claim 1 clearly refers to *the output signal* from the broadband analog front end circuit that the programmable filter is configured to filter frequency bands into a plurality of separate, variable bandwidth transmission channels. Hence, Claim 1 refers to *a signal flowing in a single direction not two signals flowing in opposite directions, i.e., downstream and upstream signals*. To the extent the Examiner is relying upon col. 5, lines 1 to 9 of Timm et al. for the increase in bandwidth in the "on-hook" condition, such is of no avail. This passage refers to at best a single data path the bandwidth of which can be varied depending upon whether the network is in an "on-hook" or "off-hook" state. This passage does not teach or suggest a programmable filter configured to filter frequency bands of an output signal from a broadband analog front end circuit into a plurality of *separate, variable bandwidth transmission channels.* Therefore, the Examiner's reliance on Timm et al. at col. 5, lines 1 to 9 is misplaced. The Examiner also cites to Timm et al. at col. 8, lines 36 to 43. This passage again refers at best to a single data path the bandwidth of which can be varied depending upon whether the network is in an "on-hook" or "off-hook" state. Finally, the Examiner attempts to rely upon Timm et al. at col. 8, lines 53 to 57 that reads as follows:

> The DSL modem of claim 15 wherein said programmable filter circuitry sets receive and transmit filter ranges defining the frequency ranges for receiving and transmitting data, respectively, responsive to the output of said detection circuitry.

This passage does not teach or suggest a programmable filter configured to filter frequency bands of an output signal from a broadband analog front end circuit into a plurality of *separate, variable bandwidth transmission channels.*

As such, the rejection of Claim 1 under 35 U.S.C. § 102 based on Timm et al. cannot possibly be sustained.

Claims 2, 6 and 8 through 14 depend directly or indirectly from Claim 1 and therefore, are allowable for at least the reasons that Claim 1 is allowable.

2. Claim 3 is not anticipated by Timm et al.

Claim 3 requires that the analog digital converter is coupled *between* the broadband analog front end circuit and the programmable filter. Notably, the Examiner is relying upon splitter 30 of Timm et al. to satisfy the broadband analog front end circuit. The Examiner is further relying upon element 44 of Timm et al. to satisfy the analog to digital converter circuit. As is readily evident from Figure 4 of Timm et al. and the corresponding description, splitter 30 is positioned to the right of programmable filter 40. Hence, element 44 is not coupled *between* element 40 and element 30. As such, Timm et al. does not anticipate Claim 3.

3. Claim 4 is not anticipated by Timm et al.

Appellants' invention, as recited in Claim 4, includes all of the limitations of Claim 1 and further provides that the plurality of separate, variable bandwidth transmission channels are directed to a plurality of different service providers.

The Examiner relies upon col. 3, lines 16 to 24 and 32 to 40 as well as Figures 2 and 3 of Timm et al. Specifically, the Examiner argues that the voice frequency band between 0 and 3.5 kHz, the upstream frequency spectrum between 30 KHz and 138 KHz and downstream band using frequency between 181 KHz and 1.1 MHz reads on the plurality of separate transmission channels. (See Official Action dated June 23, 2008, p. 4) The Examiner further contends that voice transmission and data transmission can be interpreted as different service providers.

Claim 4,which includes all of the limitations of Claim 1, requires that the programmable be configured to filter frequency bands of an output signal from a broadband analog front end circuit into a plurality of *separate, variable bandwidth transmission channels* and the plurality of

separate transmission channels are provided to a plurality of different service providers. Timm et al. uses splitter 30 (not programmable filter 40) to separate the voice band from the DSL band before the signal ever reaches the programmable filter 40. (See Timm et al., col. 3, lines 32-34, "[i]n order to separate the voice band from the DSL bands, splitters are used, as shown in FIG. 3.") Hence, filter 40 of Timm et al. cannot possibly provide two separate transmission channels to two different service providers as the voice band never passes through the filter 40.

For at least these reasons, the rejection of Claim 4 cannot possibly be sustained.

4. Claim 5 is not anticipated by Timm et al.

Appellants' invention, as recited in Claim 5, includes all of the limitations of Claims 1 and 4 and further provides that the plurality of separate, variable bandwidth transmission channels comprise a plurality of signals with a plurality of different modulation schemes.

The Examiner points to Timm et al. at col. 6, lines 57 to 65 in an attempt to satisfy the limitations of Claim 5. However, nowhere does the cited passage of Timm et al. discloses that a plurality of separate, variable bandwidth transmission channels provided by a programmable filter comprise a plurality of signals with a plurality of different modulation schemes. The cited passage of Timm et al. merely recites various modulation schemes. For this reason, Timm et al. cannot anticipate Claim 5.

5. Claim 15 is not anticipated by Timm et al.

Appellants' invention, as recited in Claim 15, is directed to a method of providing a plurality of services over a twisted pair telephone line, comprising the steps of: receiving a broadband analog signal from the twisted pair telephone line; *filtering the broadband analog signal using a programmable filter into a plurality of separate bands wherein the plurality of separate bands are determined by programming the filter to generate a plurality of variable*

bandwidth channels; and transmitting the plurality of separate bands to a plurality of different service providers.

Timm et al. does not teach or suggest at least the step of filtering the broadband analog signal using a programmable filter into a plurality of separate bands wherein the plurality of separate bands are determined by programming the filter to generate a plurality of variable bandwidth channels. Further, Timm et al. does not teach or suggest the step of transmitting the plurality of separate bands to a plurality of different service provider.

As explained in detail in connection with Claim 1, Timm et al. does not teach or suggest a programmable filter that filters a broadband analog signal into a plurality of separate bands wherein the plurality of separate bands are determined by programming the filter to generate a plurality of variable bandwidth channels. As such, Timm et al. does not teach or suggest the filtering step set forth in Claim 15. Further, as explained in detail in connection with Claim 4, Timm et al. does not teach or suggest a programmable filter that filters a signal to provide a plurality of channels to different service providers. The voice band of Timm et al. is separated by the splitter 30 and never passes through the filter 40. Hence, filter 40 cannot possibly transmit a plurality of variable bandwidth channels to a plurality of different service providers. Therefore, Timm et al. does not teach or suggest Appellants' invention as set forth in Claim 15.

Claims 16 and 17 depends from Claim 15 and, therefore, are allowable for at the reasons that Claim 15 is allowable.

6. Claim 18 is not anticipated by Timm et al.

Appellants' invention, as recited in Claim 18, is directed to a line interface for coupling a twisted pair telephone line with a communications network. The line interface includes a broadband analog front end circuit coupling the twisted pair telephone line with the line interface

and a *programmable filter* coupled to receive an output signal from the broadband analog front end circuit *and configured to filter frequency bands of the output signal into a plurality of different transmission channels. The plurality of different transmission channels include a first transmission channel having a first variable frequency bandwidth and a second transmission channel having a second variable frequency bandwidth wherein the programmable filter can be programmed to adjust a band edge of either the first transmission channel or the second transmission channel to increase or decrease the first and second variable frequency bandwidths, respectively.*

The Examiner's rejection of Claim 18 is predicated on reading the upstream signal and downstream signal of Timm et al. as the first and second transmission channels. (See Official Action dated June 23,2008, p. 7) However, the clear and unambiguous language of Claim 18 precludes using the upstream and downstream signals of Timm et al. as the first and second transmission channels. Specifically, Claim 18 requires a programmable filter coupled to receive *an* output signal from the broadband analog signal front end circuit and configured to filter frequency bands of *the* output signal into a plurality of different transmission channels. Hence, Claim 18 requires a signal flowing in one direction and, therefore cannot be satisfied by two different signals flowing in two different directions.

For at least the above reasons, the rejection of Claim 18 cannot be sustained.

7. Claim 19 is not anticipated by Timm et al.

Claim 19 further requires the programmable filter to filter the frequency bands of the output signal into three variable frequency bands. As explained in connection with Claim 18, Timm et al. does not teach or suggest a programmable filter that filters the frequency bands of

the output signal into two variable frequency bands. As such, Timm et al. clearly does not anticipate Claim 19.

8. Claim 20 is not anticipated by Timm et al.

Appellants' invention, as recited in Claim 20, is directed to a method of providing a plurality of services over a twisted pair telephone line. The method includes the steps of: receiving a broadband analog signal from the twisted pair telephone line; *filtering the broadband analog signal using a programmable filter into a plurality of separate frequency bands including a first transmission channel having a first variable frequency bandwidth and a second transmission channel having a second variable frequency bandwidth; programming the programmable filter to adjust a band edge of either the first transmission channel or the second transmission channel to increase or decrease the first and second variable frequency bandwidths, respectively; and, transmitting the first and second transmission channels to different service providers.*

Timm et al. does not anticipate Claim 20 as it does not disclose the filtering step or the transmitting step. As explained previously, the programmable filter of Timm et al. does not filter a broadband analog signal into a plurality of separate frequency bands including a first transmission channel having a first variable frequency bandwidth and a second transmission channel having a second variable frequency bandwidth. The Examiner is attempting to rely upon two different signals, i.e., upstream and downstream signals to read on the first and second transmission channels as opposed to the claimed programmable filter that receives one signal and filters the same into a plurality of separate frequency bands including first and second transmission channels. Further, as previously explained in connection with Claim 4, Timm et al. clearly does not teach or suggest transmitting the first and second transmission channels created

by the programmable filter to different service providers. The voice band of Timm et al. is separated by splitter 30 and never passes through programmable filter 40. Hence, the voice band cannot possibly constitute either the first or second transmission channels created by the claimed programmable filter.

9. Claim 21 is not anticipated by Timm et al.

Claim 21 depends from Claim 20 and recites that the step of filtering further includes filtering the broadband signal to include a third transmission channel having a third variable frequency bandwidth.

As explained in connection with Claim 20, Timm et al. does not even disclose filtering a signal into a first transmission channel and a second transmission channel using a programmable filter. As such, it clearly does not anticipate Claim 21 requiring a filtering step that generates three transmission channels having variable frequency bandwidths.

B. THE REJECTION OF CLAIMS 7 AND 17 UNDER 35 USC 103 IS ERRONEOUS

Obviousness, ultimately, is a determination of law based on underlying determinations of fact. Monarch Knitting Machinery Corp. v. Sulzer Morat Gmbh, 139 F. 3d 877, 881 (Fed. Cir. 1998) "These underlying factual determinations include (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and, (4) the extent of any proffered objective indicia of non-obviousness." Id.

"During examination, *the examiner bears the initial burden of establishing a prima facie case of obviousness*...The prima facie case is a procedural tool, and requires the examiner *to*

initially produce evidence to support a ruling of obviousness. In re Kumar, 418 F.3d 1361, 1366, 76 USPQ 1048 (Fed. Cir. 2005)(emphasis added).

The invention must be considered as a whole without the benefit of hindsight, and the claims must be considered in their entirety. Rockwell International Corp. v. United States, 147 3 F.3d 1358, 1364 (Fed. Cir. 1998)

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." In re Fine, 837 F.2d 1071, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). It is impermissible to use the claimed invention as a blueprint from which to reconstruct the prior art to satisfy the claimed invention. Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 227 USPQ 543, 548 (Fed. Cir. 1985) ("From its discussion of the prior art it appears to us that the court, guided by the defendants, treated each reference as teaching *one* or more of the specific components for use in the Feil system, although the Feil system did not then exist. Thus the court reconstructed the Feil system, using the blueprint of the Feil claims. As is well established, this is legal error.")

The prior art must be considered as a whole and suggest the desirability and thus the obviousness of making the combination. Lindermann Maschinefabrik Gmbh v. American Hoist and Derrick Co., 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984)

There must be a suggestion or motivation in the prior art to modify a reference to satisfy the claimed invention. In re Gordon, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "*The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.*" *Id.* (emphasis added)

"When an obviousness determination is based *on* multiple references, there must be a showing of some 'teaching, suggestion, or reason' to combine the references...Although a

reference need not expressly teach that the disclosure contained therein should be combined with anotherthe showing *of* combinability, in whatever form, must be *'clear and particular.*" Winner International Royalty Corp. v. Wang, 202 F.3d 1340, 1348-1349 (Fed. Cir.), cert. denied, 530 U.S. 1238 (2000)(emphasis added)

"'The factual inquiry whether to combine references must be thorough and searching'...*It must be based on objective evidence of record.* This precedent has been reinforced in myriad decisions and cannot be dispensed with...The need for specificity pervades this authority...This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority...'*Common knowledge and common sense,' even if assumed to derive from the agency's expertise, do not substitute for authority when the law requires authority.*" In re Lee, 277 F.3d 1338, 1343-1345 (Fed. Cir. 2002)

"There is no suggestion to combine, however, if a reference teaches away from its combination with another source." Tech Air, Inc., 192 F.3d at 1360 (emphasis added). See also Winner International Royalty Corp., 202 F.3d at 1349-1350 ("Second, if Johnson did in fact teach away from Moore, then that finding alone can defeat Wang's obviousness claim.")

"A reference may be said to teach away when a person of ordinary skill, upon reading the reference would be discouraged from following the path set *out* in the reference, *or* would be led in a direction divergent from the path taken by the applicant... [*or*] if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by applicant." In re Gurley, 27 F. 3d 551, 553, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994) and Tech Air, Inc. v. Denso Mfg. Michigan Inc., 192 F.3d 1353, 1360 (Fed. Cir. 1999).

1. Claim 7 is not rendered obvious by the combination of Timm et al. and O'Toole et al.

Claim 7 depends from Claim 6 that in turn depends from Claim 1. Because O'Toole does not supply the material deficiencies of Timm et al. noted in connection with Claim 1, the Examiner's proposed combination does not render obvious Claim 7. Further, the Examiner alleges that O'Toole et al. "teach the line interface wherein said software is downloaded to said programmable filter (col. 7, lines 54-61, recited allow for code updates as software is downloaded)." (See Official Action dated June 23, 2008, p. 9) However, the cited passage in O'Toole refers to *firmware* not software. For at least these reasons, the proposed combination does not render obvious Appellants' invention recited in Claim 7.

2. Claim 17 is not rendered obvious by the combination of Timm et al. and O'Toole et al.

Claim 7 depends from Claim 15. Because O'Toole does not supply the material deficiencies of Timm et al. noted in connection with Claim 15, the Examiner's proposed combination does not render obvious Claim 17. Further, the Examiner alleges that O'Toole et al. "discloses the limitation of the method of claimed wherein said programmable filter is upgraded by programming said filter with software (recited 'the updateable flash ROM and volatile memory allow for code updates, fixes and enhancements'; col. 7, lines 54-61)." (See Official Action dated June 23, 2008, p. 9) However, the cited passage in O'Toole refers to *firmware* not software. For at least these reasons, the proposed combination does not render obvious Appellants' invention recited in Claim 17.

C. CONCLUSION

When evaluated under the controlling legal standards, the Examiner's rejections of Claims 1 through 21 cannot be sustained. Hence, Appellants respectfully request that all grounds of rejection be reversed.

A check in the amount of $500.00 was submitted with the filing of Appellants' Appeal Brief on December 21, 2005. A check in the amount of $40.00 is attached hereto to satisfy the increase in the government fee for filing the subject appeal brief. It is believed that no additional fees are due. However, should that determination be incorrect, the Commissioner is hereby authorized to charge any deficiencies to Deposit Account No. 50-0562 and notify the undersigned in due course.

Respectfully submitted,

Date: 12/23/08

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VIII. CLAIMS APPENDIX

1. A line interface for coupling a twisted pair telephone line with a communications network, comprising:

a broadband analog front end circuit coupling said twisted pair telephone line with said line interface; and

a programmable filter coupled to receive an output signal from said broadband analog front end circuit and configured to filter frequency bands of said output signal into a plurality of separate, variable bandwidth transmission channels, wherein said plurality of separate variable bandwidth transmission channels are associated with said communications network, and wherein said frequency bands and said variable bandwidths are determined by programming said programmable filter.

2. The line interface of claim 1, wherein said communications network comprises a data network and a voice network.

3. The line interface of claim 1, further comprising:

an analog to digital converter circuit, coupled between said broadband analog front end circuit and said programmable filter, configured to convert said output signal to a digital signal, wherein said programmable filter is a digital programmable filer.

4. The line interface of claim 1, wherein said plurality of separate transmission channels are directed to a plurality of different service providers.

5. The line interface of claim 4, wherein said plurality of separate transmission channels comprise a plurality of signals with a plurality of different modulation schemes.

6. The line interface of claim 1, wherein said programmable filter is programmed with

software.

7. The line interface of claim 6, wherein said software is downloaded to said programmable filter.

8. The line interface of claim 1, wherein said plurality of separate frequency bands are determined according to a protocol including at least one of POTS, ISDN, ADSL, VDSL, SDSL, IDSL, HDSL, and HDSL2.

9. The line interface of claim 8, wherein said ADSL is one of full rate ADSL, G.Lite, CAP, and QAM.

10. The line interface of claim 9, wherein said ADSL and said POTS coexist on said twisted pair telephone line.

11. The line interface of claim 10, further comprising: a POTS detector circuit coupled to provide a POTS usage signal to said programmable filter indicating that a POTS bandwidth is in use.

12. The line interface of claim 11, wherein an ADSL bandwidth is expanded to include said POTS bandwidth when said POTS usage signal indicates that said POTS bandwidth is not in use, and said ADSL bandwidth is reduced to exclude said POTS bandwidth when said POTS usage signal indicates that said POTS bandwidth is in use.

13. The line interface of claim 11, wherein said POTS detector circuit detects whether a telephone connected to said twisted pair telephone wire is on hook or off hook.

14. The line interface of claim 11, wherein said POTS detector circuit determines if a POTS signal is communicated in said ADSL bandwidth or if said POTS signal is communicated in said POTS bandwidth.

15. A method of providing a plurality of services over a twisted pair telephone line, comprising the steps of:

receiving a broadband analog signal from said twisted pair telephone line;

filtering said broadband analog signal using a programmable filter into a plurality of separate bands wherein said plurality of separate bands are determined by programming said filter to generate a plurality of variable bandwidth channels; and

transmitting said plurality of separate bands to a plurality of different service providers.

16. The method of claim 15, wherein said separate bands are transmitted to said plurality of different service providers through a data network and a voice network.

17. The method of claim 15, wherein said programmable filter is upgraded by programming said filter with software.

18. A line interface for coupling a twisted pair telephone line with a communications network, comprising:

a broadband analog front end circuit coupling said twisted pair telephone line with said line interface; and

a programmable filter coupled to receive an output signal from said broadband analog front end circuit and configured to filter frequency bands of said output signal into a plurality of different transmission channels including:

a first transmission channel having a first variable frequency bandwidth; and

a second transmission channel having a second variable frequency bandwidth,

wherein said programmable filter can be programmed to adjust a band edge of either said first transmission channel or said second transmission channel to increase or decrease said first and second variable frequency bandwidths, respectively.

19. The line interface of claim 18, further comprising:

a third transmission channel having a third variable frequency bandwidth.

20. A method of providing a plurality of services over a twisted pair telephone line, comprising the steps of:

receiving a broadband analog signal from said twisted pair telephone line:

filtering said broadband analog signal using a programmable filter into a plurality of separate frequency bands including a first transmission channel having a first variable frequency bandwidth and a second transmission channel having a second variable frequency bandwidth;

programming said first programmable filter to adjust a band edge of either said first transmission channel or said second transmission channel to increase or decrease said first and second variable frequency bandwidths, respectively; and

transmitting said first and second transmission channels to different service providers.

21. The method of claim 20, wherein said step of filtering further comprises the step of:

filtering broadband analog signal to further include a third transmission channel having a third variable frequency bandwidth.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.